

## REMARKS

In the patent application, claims 1-21 are pending.

In the office action, all pending claims are rejected. Applicant has amended claims 1-5, 7, 9, 12 and 17 to replace the “first fuel component” to “reactant” and the “second fuel component” to “oxidant” as suggested by the Examiner. Applicant also amended the claims to replace “photon-exchange” to “proton-exchange” as suggested by the Examiner.

At sections 3 and 4 of the office action, the Examiner maintains that that the terms “hydrogen fuel reactant” or “reactant” and “oxidant reactant” or “oxidant” be used to replace the terms “first fuel component” and “second fuel component” in the claims. Applicant has amended the claims as suggested.

At section 5, claims 1, 5, 6, 10, 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by *Jankowski* (U.S. Patent No. 6,638,654). In rejecting these claims, the Examiner states that *Jankowski* discloses a fuel cell comprising a planar substrate 44 having a plurality of apertures 43 for securing a plurality of membrane electrode assembly segments 41. Each of the membrane electrode assembly segments comprises a proton-exchange membrane sandwiched between two activation layers.

Applicant respectfully disagrees.

*Jankowski* discloses an electrode/electrolyte/electrode structure comprising a cathode 54, an anode 46 and an electrolyte layer 53 positioned between the cathode and anode (Figure 3). This electrode/electrolyte/structure is equivalent to the layer structure 13 in Figures 1 and 2 (col.5, lines 1-7), the fuel stack 65 Figure 5 (col.8, lines 17-23, and the fuel stack 85 in Figure 6 (col.9, lines 34-42). While the substrate 44 has a plurality of windows or openings 43, there is only a single proton-exchange material 53 located between the cathode 54 and the anode 46. The cathode 54, the proton-exchange material 53 and the anode 46 form an electrode/electrolyte/electrode assembly as part of the single membrane-electrode assembly 41 (col.6, lines 14-45). This single membrane-electrode assembly 41 covers all the openings 43 on the substrate 44.

Although the proton-exchange material 53 can be a YSZ electrolyte, a membrane, a solid oxide, or Nafion electrolyte (col.5, lines 35-41), *Jankowski* fails to disclose a fuel cell having a

plurality of membrane-electrode assembly segments wherein each membrane-electrode assembly segment is secured to one of the apertures on the planar substrate. For this reason alone, independent claims 1, 5, 12 and 17 are distinguishable over the cited *Jankowski* reference.

As for the dependent claims, they are also distinguishable over *Jankowski*, in view of other secondary references.

#### CONCLUSION

As amended, claims 1-21 are allowable. Early allowance of all pending claims is earnestly solicited.

Respectfully submitted,



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